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JC781 U.S. PTO 03/31/00

# PATENT APPLICATION TRANSMITTAL LETTER
(Large Entity)

Docket No.
**INTL-0365-US (P8584)**

TO THE ASSISTANT COMMISSIONER FOR PATENTS

JC525 U.S. PTO 09/540968 03/31/00

Transmitted herewith for filing under 35 U.S.C. 111 and 37 C.F.R. 1.53 is the patent application of:

**STANLEY MO, DAVID B. KINDER and LINDA B. WELSH**

For: **MANAGING ON-LINE TRANSACTIONS**

Enclosed are:

- ☒ Certificate of Mailing with Express Mail Mailing Label No. **EL515090425US**
- ☒ **Three (3)** sheets of drawings.
- ☐ A certified copy of a application.
- ☒ Declaration ☒ Signed. ☐ Unsigned.
- ☒ Power of Attorney
- ☐ Information Disclosure Statement
- ☐ Preliminary Amendment
- ☒ Other: **Recordation Form Cover Sheet; Assignment and check for $40.**

**CLAIMS AS FILED**

| For | #Filed | #Allowed | #Extra | | Rate | Fee |
|---|---|---|---|---|---|---|
| **Total Claims** | 30 | - 20 = | 10 | x | $18.00 | $180.00 |
| **Indep. Claims** | 6 | - 3 = | 3 | x | $78.00 | $234.00 |
| **Multiple Dependent Claims (check if applicable)** ☐ | | | | | | $0.00 |
| | | | | | **BASIC FEE** | $690.00 |
| | | | | | **TOTAL FILING FEE** | $1,104.00 |

- ☒ A check in the amount of **$1,104.00** to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. **20-1504** as described below. A duplicate copy of this sheet is enclosed.
  - ☐ Charge the amount of as filing fee.
  - ☒ Credit any overpayment.
  - ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
  - ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Dated: **March 31, 2000**

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INTL-0365-US
(P8584)

# APPLICATION

# FOR

# UNITED STATES LETTERS PATENT



**TITLE:** MANAGING ON-LINE TRANSACTIONS

**INVENTORS:** STANLEY MO, DAVID B. KINDER and LINDA B. WELSH

Express Mail No.: EL515090425US

Date: March 31, 2000

# MANAGING ON-LINE TRANSACTIONS

## Background

This invention relates generally to electronic commerce and particularly to managing on-line transactions for the sale of goods or services.

In a number of instances in connection with on-line transactions, one entity is responsible for completing the on-line transaction with a customer. For present purposes that entity will be called the "on-line transaction service". Typically, the on-line transaction service is a server which is coupled to the Internet. Customers access the Internet web address and web pages maintained by the on-line transaction service. From these web pages, the customers can obtain information about available products. In addition, the on-line transaction service provides software for implementing on-line sales of goods and services. Thus, the on-line transaction service takes care of implementing the transaction to purchase the goods or services.

Generally, on-line transactions also involve order fulfillment. Commonly, the order fulfillment may be undertaken by an entity different than the on-line transaction service. In order to implement order fulfillment, an inventory management system may be

utilized. The inventory management system keeps track of the actual physical inventory that the product supplier has in place. This inventory may be actual existing inventory or the inventory that will exist based on current product schedules. Generally, the inventory management system is associated with a product vendor which may be the distributor or manufacturer of a given product. The inventory management system of the product's vendor is referred to herein as the product vendor inventory management system. It may be implemented by a server coupled to a network such as the Internet.

Thus, typically the on-line transaction proceeds with a customer accessing the on-line transaction service's web site and making a request for a purchase. The on-line transaction service typically contacts the product vendor inventory management system to determine whether the inventory is available in the time frame typically associated with such transactions. If so, the on-line transaction service may proceed to complete the transaction with the on-line customer. The service may notify the product vendor inventory management system of the transaction so that the inventory management system may appropriately adjust its available inventory.

While the system works very well in some circumstances, when the demand for products is particularly high, the system may break down. In particular, the delay

inherent in accessing the inventory management system may be extended because of current bandwidth capacity on the Internet and the number of requests for inventory management information coming into the inventory management system.

Thus, the on-line customer may grow impatient and may not wish to wait the time needed to verify that the inventory is available. This may result in lost sales. Moreover, the on-line transaction service may be bogged down by on-line customers simply connected and waiting for verification of their transactions. This may result in a decreased rate at which transactions may be completed by the on-line transaction service.

Thus, there is a need for a better way to manage on-line transactions which reduces delay and conserves bandwidth.

## Brief Description of the Drawings

Figure 1 is a schematic depiction of one embodiment of the present invention;

Figure 2 is a flow chart for software used by the on-line transaction service in accordance with one embodiment of the present invention;

Figure 3 is a flow chart for software which may be utilized by the on-line transaction service in accordance with one embodiment of the invention;

Figure 4 is a flow chart for software which may utilized by the on-line transaction service in accordance with one embodiment of the present invention; and

Figure 5 is a flow chart of software which may be utilized by a product vendor inventory management system in accordance with one embodiment of the present invention.

## Detailed Description

Referring to Figure 1, an e-commerce system 10 may connect an on-line customer 18 with an on-line transaction service 12. The on-line transaction service 12 may include a server which presents web pages for viewing by on-line customers 18 coupled to a network 14 such as the Internet. The on-line customer may decide to make various purchases by inputting information into graphical user interfaces provided by the service 12.

Before the on-line transaction service 12 confirms the transaction requested by the on-line customer 18 over the network 14, the on-line transaction service 12 checks its available inventory of a given product. This check ensures that the requested product is or will be available in the time frame normally implemented by the service 12 or as requested by the on-line customer 18.

In accordance with one embodiment of the present invention, the on-line transaction service 12 maintains an inventory or product allocation for various products which it offers for sale to on-line customers. The on-line

transaction service 12 receives its allocation or inventory by a query made of the product vendor inventory management system 16. However, instead of simply clearing one specific transaction, the on-line transaction service 12 requests an allocation of some number of products from the product vendor inventory management system 16. The service 12 may determine, based on current demand, a suitable inventory to be allocated to the service 12. The generation of this allocation may be done in software implemented by agreement between the service 12 and the system 16 in one embodiment of the invention.

When the on-line transaction service 12 finds that its inventory in a given product or set of products has been sufficiently depleted, the service 12 contacts the system 16 to gain additional inventory. As transactions complete, the service 12 decrements its inventory allocation until such time as the inventory falls below a level which triggers a request for an inventory or allocation replenishment.

Software 20 may be stored on a storage 13 associated with the server utilized by the service 12. Similarly, software 52 may be stored on storage 17 associated with the system 16.

In this way, it is not necessary for the service 12 to delay implementing the transaction with the customer while checking with the system 16 to ensure that the system 16

still has available inventory. The service 12 may be secure in knowing that it has received a pre-allocation of a given inventory against which it can complete transactions for a given period of time. Thus, the number of times that the service 12 must contact the system 16 may be decreased. This may result in faster transactions with each on-line customer and the ability of the service 12 to handle a higher number of customers in a given period of time.

Referring to Figure 2, the software 20 stored on the storage 13 associated with the service 12 begins by checking whether an allocation for a given product or group of products is too low as indicated in diamond 22. The inventory low indication may be set to a predetermined inventory number for each product. When the available inventory drops below that number, an inventory low indication may be set. Alternatively, the inventory low indication may be set dynamically. That is, it may be set in terms of a given amount of time. Depending on the rate of on-line transactions, a higher inventory level should trigger a low inventory indication. Thus, in periods of low activity, the low inventory indication may be set at a low inventory level and in periods of high activity, the low inventory indication may be set higher. This accommodates for the dynamic nature of transactions and helps to prevent unnecessary requests for inventory

allocation. Moreover, it may decrease the likelihood of an inventory depletion.

In the case where the inventory is too low, the product vendor inventory management system 24 may be accessed over the network 14 as indicated in block 24. The on-line transaction service 12 may request additional inventory as indicated in block 26. The additional inventory may then be granted by the product vendor inventory management system 16 as indicated in block 28. In such case, the on-line transaction service 12 increases its inventory counter corresponding to the allocation received, as indicated in block 30.

Referring next to Figure 3, the software 26 for implementing the request for more inventory is shown in greater detail. Initially, the software 26 determines the rate of transactions as indicated in block 32. In cases where the transaction rate is very high, it may be necessary to request higher inventory allocations or to request inventory allocations more frequently. An inventory management system contact frequency level may then be obtained (block 34). The product vendor inventory management system 16 and the on-line transaction service 12 may agree upon a frequency or rate of requests for allocation increases. This rate may be in terms of a time so that the on-line transaction service need not contact the system 16 at a frequency greater than some agreed upon

level. This frequency information may be pre-stored by agreement in the on-line transaction service 12.

As indicated in block 36, the requested inventory amount may then be calculated as a function of the transaction rate and the agreed upon contact frequency. Thus, in cases where the transaction rate is high, a higher inventory allocation may be requested. The calculated inventory amount may then be requested as indicated in block 38. Alternatively, a look up table may be used.

The equation for determining the inventory amount may be predetermined between the on-line transaction service 12 and the system 16. In such case, the requested amount is automatically granted by the system 16 if available. In other embodiments, the on-line transaction service may provide more information, such as the transaction rate, to the inventory management system which may then determine an appropriate allocation from the viewpoint of the product vendor. Other variations are possible as well.

Turning next to Figure 4, the software 40 is responsible for actually implementing the on-line transaction in accordance with one embodiment of the present invention. When an on-line order is received as determined at diamond 42, a check at diamond 44 determines whether an inventory allocation sufficient to accept the order is currently available. If not, the order is declined as indicated in block 46. Otherwise, the

inventory allocation is decremented as indicated in block 48, and the transaction is completed as indicated in block 50.

The software 52, shown in Figure 5, resident on the storage 17 associated with the system 16 server begins by checking for an inventory allocation request from the on-line transaction service 12, as indicated in diamond 54 in accordance with one embodiment of the present invention. If the inventory is available as determined at diamond 56, the inventory may be automatically allocated as indicated in block 60. Otherwise, the inventory allocation request may be declined as indicated in block 58. The declination may be a total declination or may simply amount to an offer to provide whatever inventory is available at the current time. It may also provide the on-line transaction service 12 with information about what additional inventory may be available. This information may be offered to the on-line customer by the on-line transaction service 12 to determine if the customer is willing to wait the necessary time.

In some embodiments, the inventory allocation may be afforded for a predetermined time. At the end of that time, the inventory allocation may be automatically returned to the system 16.

While the present invention has been described with respect to a limited number of embodiments, those skilled in the art will appreciate numerous modifications and

variations therefrom. It is intended that the appended claims cover all such modifications and variations as fall within the true spirit and scope of this present invention.

What is claimed is:

1. A method comprising:

receiving a dedicated inventory allocation;

completing a plurality of on-line transactions against said allocation; and

requesting additional dedicated inventory allocation.

2. The method of claim 1 further including maintaining a count of available inventory allocation and decrementing said count as each on-line transaction is completed.

3. The method of claim 1 wherein receiving a dedicated inventory allocation includes receiving an inventory allocation from a remote site.

4. The method of claim 1 wherein receiving a dedicated inventory allocation includes receiving said allocation over a network.

5. The method of claim 4 wherein receiving a dedicated inventory allocation includes receiving said allocation over the Internet.

6. The method of claim 1 wherein requesting an additional dedicated inventory allocation includes

determining whether the inventory allocation needs to be replenished.

7. The method of claim 6 wherein determining whether the inventory allocation needs to be replenished includes determining whether the existing allocation has been reduced below a preset level.

8. The method of claim 6 wherein determining whether the inventory allocation needs to be replenished includes implementing a dynamic calculation that considers the rate at which on-line transactions are being completed.

9. The method of claim 8 including utilizing the rate at which transactions are completed and the rate at which additional inventory is to be requested to determine whether the inventory allocation needs to be replenished.

10. An article comprising a medium for storing instructions that cause a processor-based system to:

receive a dedicated inventory allocation;

complete a plurality of on-line transactions against said allocation; and

request additional dedicated inventory allocation.

11. The article of claim 10 further storing instructions that cause a processor-based system to maintain a count of available inventory allocation and decrement said count as each on-line transaction occurs.

12. The article of claim 10 further storing instructions that cause a processor-based system to receive an inventory allocation from a remote site.

13. The article of claim 10 further storing instructions that cause a processor-based system to receive said allocation over a network.

14. The article of claim 13 further storing instructions that cause a processor-based system to receive said allocation over the Internet.

15. The article of claim 10 further storing instructions that cause a processor-based system to determine whether the inventory allocation needs to be replenished.

16. The article of claim 15 further storing instructions that cause a processor-based system to determine whether the existing allocation has been reduced below a preset level.

17. The article of claim 15 further storing instructions that cause a processor-based system to implement a dynamic calculation that considers the rate at which on-line transactions are being completed.

18. The article of claim 17 further storing instructions that cause a processor-based system to utilize the rate at which transactions are completed and the rate at which additional inventory is to be requested to determine whether the inventory allocation needs to be replenished.

19. A system comprising:

a server that completes a plurality of on-line transactions;

a memory coupled to said server that stores an inventory allocation; and

said server decrements said inventory allocation with each transaction, monitors the inventory allocation and automatically requests an additional inventory allocation.

20. The system of claim 19 wherein said server is coupled to the Internet and completes transactions over the Internet.

21. The system of claim 19 wherein said server dynamically determines when to request additional inventory allocation based at least in part on the rate at which transactions are being completed.

22. The system of claim 21 wherein said server requests additional inventory allocation based at least in part on a predetermined frequency for requests for additional inventory allocation.

23. A method comprising:

providing a dedicated inventory allocation;

receiving a request for an additional dedicated inventory allocation; and

providing an additional dedicated inventory allocation.

24. A method of claim 23 further including providing a frequency for requests for additional allocation.

25. A method of claim 23 including providing said inventory allocation over the Internet.

26. An article for comprising a medium that stores instructions that cause a processor-based system to:

provide a dedicated inventory allocation;

receive a request for additional dedicated inventory allocation; and

provide additional dedicated inventory allocation.

27. The article of claim 26 further storing instructions that cause a processor-based system to provide a frequency for requests for additional allocation.

28. The article of claim 26 further storing instructions that cause a processor-based system to provide said inventory allocation over the Internet.

29. A system comprising:

a server; and

a storage storing software that causes said server to provide a dedicated inventory allocation, receive a request for an additional dedicated inventory allocation, and provide an additional dedicated inventory allocation.

30. The system of claim 29 wherein said server is coupled to the Internet.

MANAGING ON-LINE TRANSACTIONS

Abstract of the Disclosure

On-line transactions may be managed between an on-line transaction service and a product vendor inventory management system by providing allocations of dedicated inventory from the system to the service. The service then may complete on-line transactions against the allocation without needing to contact the service to authorize each transaction. This may speed up the rate at which on-line transactions are completed and increase the number of transactions that can be completed by the on-line transaction service.

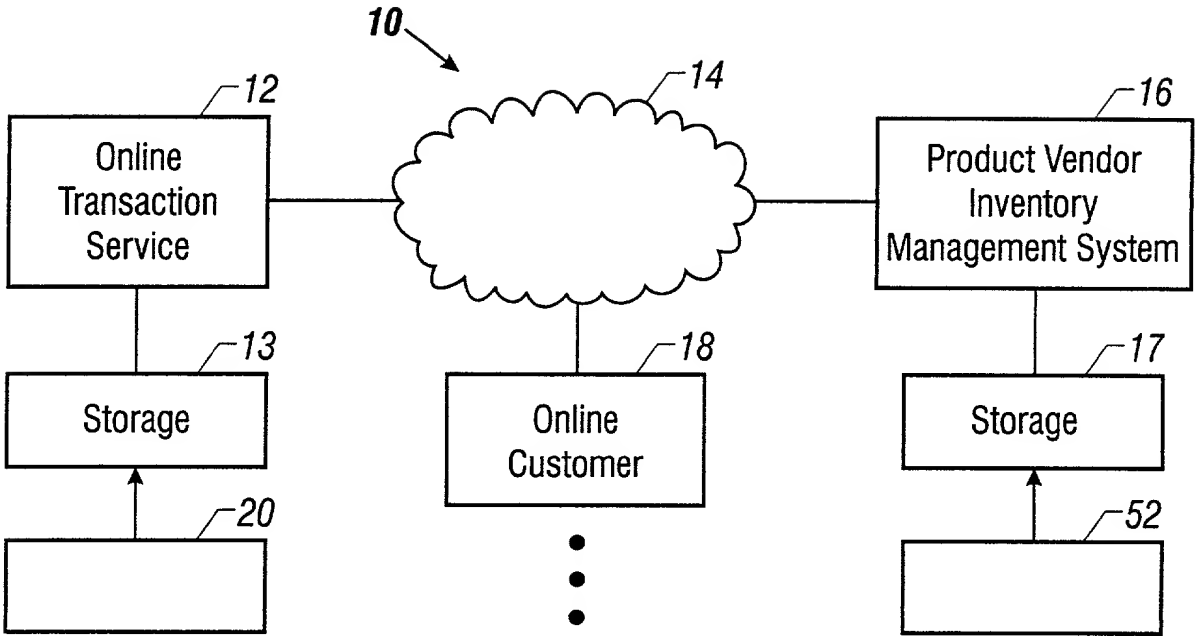
10
12
Online Transaction Service
14
16
Product Vendor Inventory Management System
13
Storage
18
Online Customer
17
Storage
20
52

FIG. 1

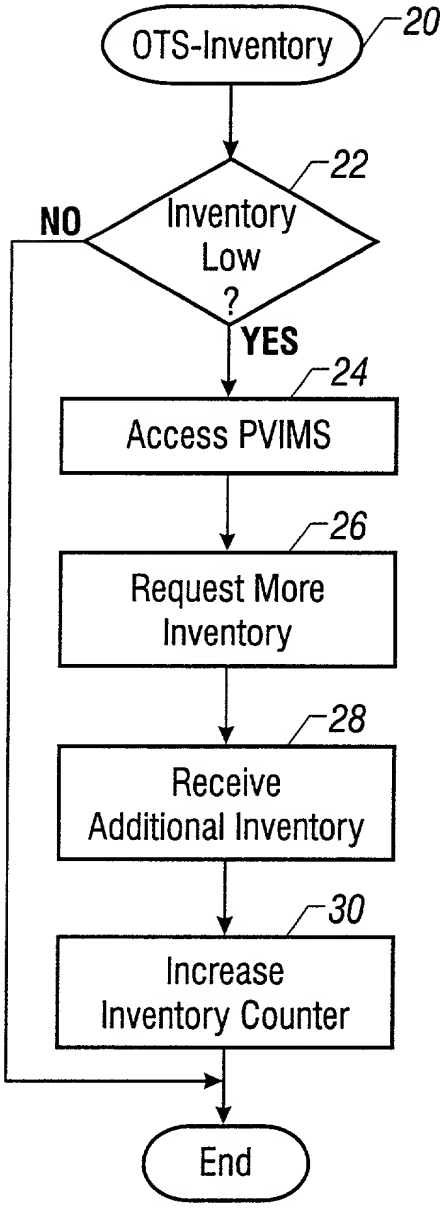
OTS-Inventory
20
22
Inventory Low ?
NO
YES
24
Access PVIMS
26
Request More Inventory
28
Receive Additional Inventory
30
Increase Inventory Counter
End

FIG. 2

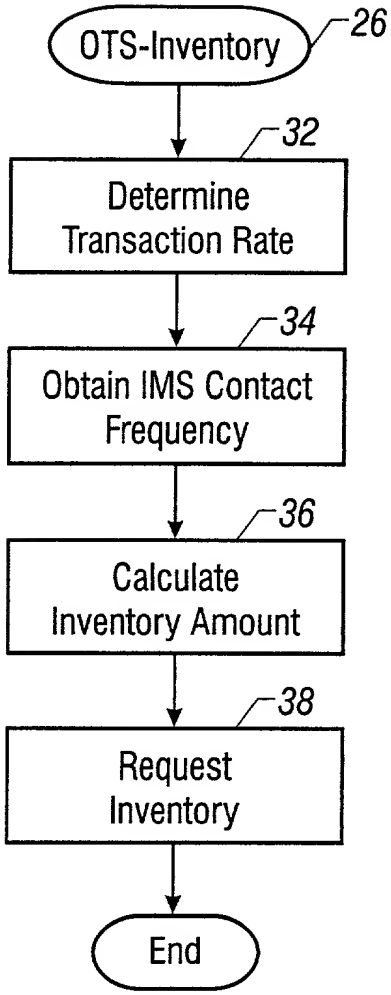
OTS-Inventory
26
32
Determine Transaction Rate
34
Obtain IMS Contact Frequency
36
Calculate Inventory Amount
38
Request Inventory
End

FIG. 3

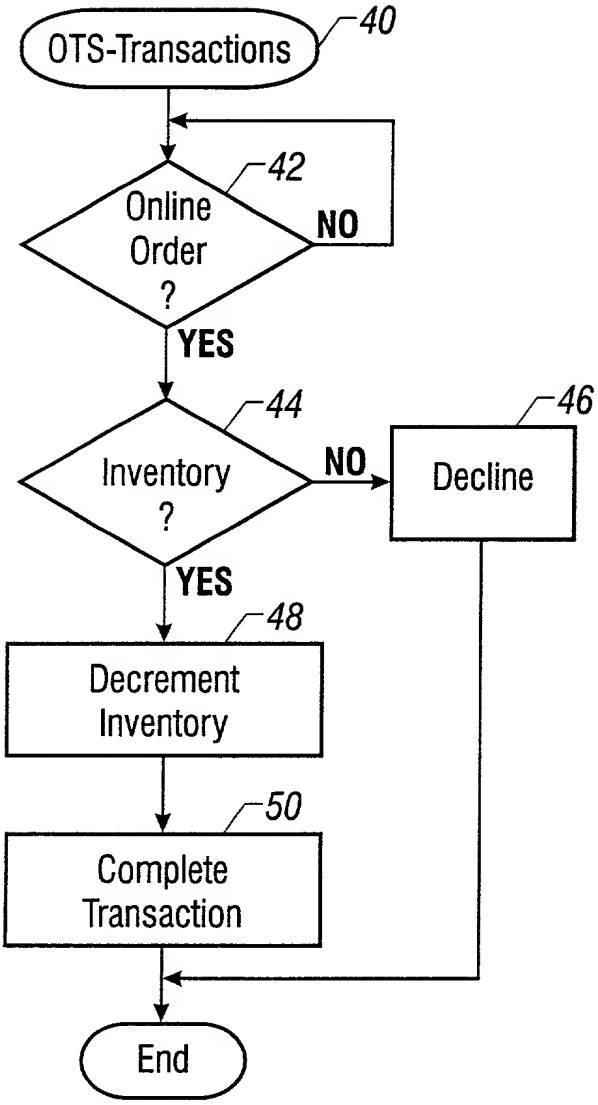
OTS-Transactions
40
42
Online Order ?
NO
YES
44
Inventory ?
NO
46
Decline
YES
48
Decrement Inventory
50
Complete Transaction
End

FIG. 4

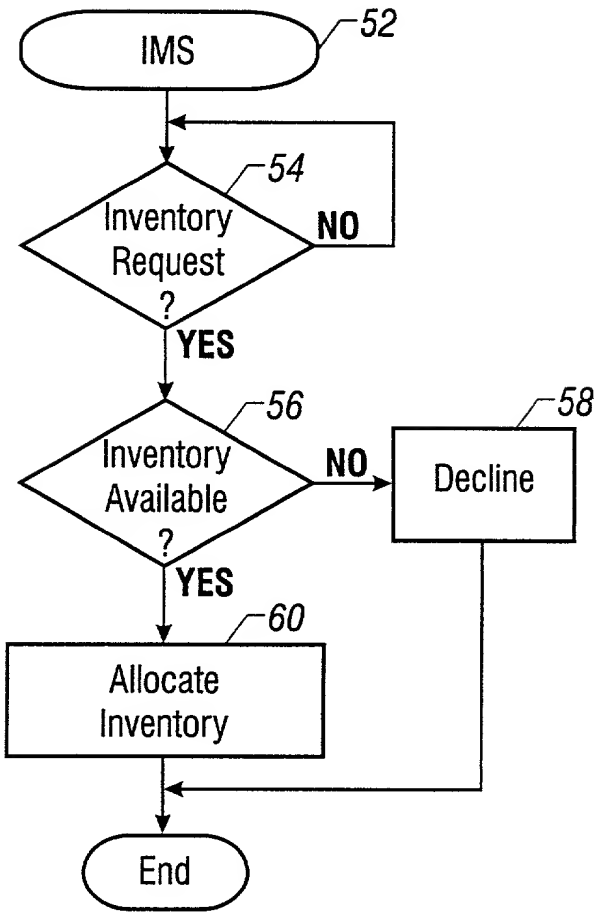
IMS
52
54
Inventory Request ?
NO
YES
56
Inventory Available ?
NO
58
Decline
YES
60
Allocate Inventory
End

FIG. 5

Attorney's Docket No.: INTL-0365 -US (P8584) PATENT

# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

MANAGING ON-LINE TRANSACTIONS

the specification of which

| | |
|---|---|
| X | is attached hereto. |
| | was filed on _____ as |
| | United States Application Number _____ |
| | or PCT International Application Number _____ |
| | and was amended on _____ |
| | (if applicable) |

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate Issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

| Prior Foreign Application(s): | | | Priority Claimed | |
|---|---|---|---|---|
| Number | (Country) | (Day/Month/Year Filed) | Yes | No |
| Number | (Country) | (Day/Month/Year Filed) | Yes | No |
| Number | (Country) | (Day/Month/Year Filed) | Yes | No |

I hereby claim the benefit under title 35, United States Code, Section 119(e) of the United States provisional application(s) listed below:

| (Application Number) | (Filing Date) |
|---|---|
| (Application Number) | (Filing Date) |

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

| (Application Number) | Filing Date | (Status-patented, pending, abandoned) |
|---|---|---|
| (Application Number) | Filing Date | (Status-patented, pending, abandoned) |

I hereby appoint Timothy N. Trop, Reg. No. 28,994; Fred G. Pruner, Jr., Reg. No. 40,779 and Dan C. Hu, Reg. No. 40,025 my patent attorneys, of TROP, PRUNER & HU, P.C., with offices located at 8554 Katy Freeway, Ste. 100, Houston, TX 77024, telephone (713) 468-8880, and Joseph R. Bond, Reg. No. 36,458; Richard C. Calderwood, Reg. No. 35,468; Sean Fitzgerald, Reg. No. 32,027; David J. Kaplan, Reg. No. 41,105; Leo V. Novakoski, Reg. No. 37,198; Naomi Obinata, Reg. No. 39,320; Thomas C. Reynolds, Reg. No. 32,488; Steven P. Skabrat, Reg. No. 36,279; Howard A. Skaist, Reg. No. 36,008; Steven C. Stewart, Reg. No. 33,555; Raymond J. Werner, Reg. No. 34,752; and Charles K. Young, Reg. No. 39,425; my patent attorneys, of INTEL CORPORATION; with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send correspondence to Timothy N. Trop, TROP, PRUNER & HU, P.C., 8554 Katy Freeway, Ste. 100, Houston, TX 77024 and direct telephone calls to Timothy N. Trop, (713) 468-8880.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| | |
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| Inventor's Signature: | Date:<br>15mar2000 |
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